

## 基本文法

「一生必學的英文文法 Grammar for Life」陳超明教授著.聯經出版

最基本句子：**S + V**（主詞+動詞）

He plays soccer at school.

The walls of the house are dirty.

We closely followed the advice in your article.

Simply taking a good sleep and drinking a lot of water has made him better.

Being married means I can eat cakes and drink wines in bed.

10. A heat pump has a coefficient of performance of 3.80 and operates with a power consumption of  $7.03 \times 10^3$  W.

(a) How much energy does it deliver into ...

29. Q/C An electric generating station is designed to have an electric output power of 1.40 MW using a turbine with two-thirds the efficiency of a Carnot engine. The exhaust energy is transferred by heat into a cooling tower at  $110^\circ\text{C}$ .

...

\* 十大句法

1. **S + (...) + V**: 大部分句子不會只有主詞+動詞而已，有時候由於增加內容(如表示主詞的特性、動作或是其他的修飾)，動詞會放在離主詞較遠的地方。例如

A woman who doesn't wear perfume **has** no future.

The man we met in the park **was** not John.

The question we ask today **is** not whether his hair is too long or not.

*Example 19.4*

**Heating a Spray Can**

A spray can containing a propellant gas at twice atmospheric pressure (202 kPa) and having a volume of 125.00 cm<sup>3</sup> **is** at 22°C. It is then tossed into an open fire. (*Warning: Do not do this experiment; it is very dangerous.*) .....

Pro'pellant n. 推進物、推進燃料。

31. A heat pump used for heating shown in Figure P22.31 **is** essentially an air conditioner installed backward. It extracts energy from colder air outside and deposits it in a warmer room. ...

**2. Ving(Ved)...., S + V** : 主要子句的「主詞+動詞」結構前，加上 **Ving** 或 **Ved** 來表示一種狀況或是說明，如果跟主詞的動作一致（皆為主動）就用 **Ving**，如果有被動的含意就用 **Ved**.

While listening to the politician's speech, many students from the physics department tried hard not to fall asleep.

Guided by the teachings of Prof. Suen, many physics-majored students pass the entrance exams of the E.E. master program.

$$\begin{aligned} V_i + \Delta V &= (\ell + \Delta\ell)(w + \Delta w)(h + \Delta h) = (\ell + \alpha\ell \Delta T)(w + \alpha w \Delta T)(h + \alpha h \Delta T) \\ &= V_i[1 + 3\alpha \Delta T + 3(\alpha \Delta T)^2 + (\alpha \Delta T)^3] \end{aligned}$$

Dividing both sides by  $V_i$  and isolating the term  $\Delta V/V_i$ , we obtain the fractional change in volume:  $\frac{\Delta V}{V_i} = 3\alpha \Delta T + 3(\alpha \Delta T)^2 + (\alpha \Delta T)^3$

Defined by Benjamin Franklin, the electron charge is negative.

3. **S + V...**, **Ving (Ved)**: 如同 2., 有時也會把 **Ving** 或是 **Ved** 放在主要結構後面，通常前面主要結構的含義會影響後面的事件。

I **come** here today invited by the parents, grateful for their hospitality.

The sun **is rising**, causing the darkness to retreat.

Figure 25-3a **shows** a less general but more conventional arrangement, called a *parallel-plate capacitor*, consisting of two parallel conducting plates of area  $A$  separated by a distance  $d$ .

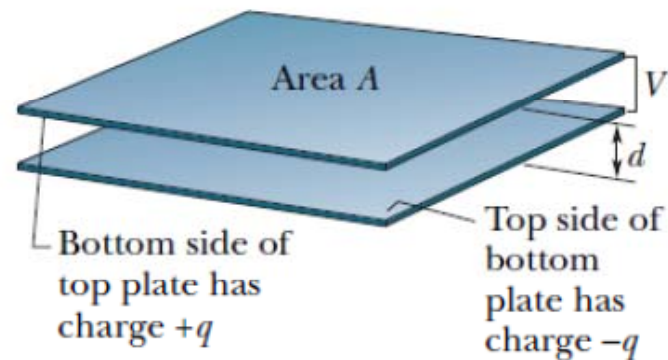


FIG. 25-3 (a)

Electrons **flow** in the wire, making a current to flow in the opposite direction.

#### 4. With + N + (Ving or Ved)...., S + V :

with[wið]介系詞

1. 與...一起, 偕同, 和... **She lives with her son.**
2. 帶著...;有...的 **The girl with long hair is my classmate.**
3. 以(手段,材料),用(工具) **That guy is learning to eat with chopsticks.**
4. 符合,一致
5. 在...一邊,贊成 **We are with you there.** 在那一點上我們站在你這一邊。
6. 跟...,反對 **The Allied Forces fought with Germany.**盟軍跟德國交戰。
7. 順...方向,跟...一起 **I had lunch with her.**
8. 加上,包括...在內 **His bank savings, with his wife's jewels, amount to three million dollars.**  
他的銀行存款加上他太太的首飾合計達三百萬元。
9. 隨著,對應 **An independent man, Peter never goes with the tide.**  
彼得是個有主見的人,從不隨流俗。

#### 4. With + N + (Ving or Ved)..., S + V :

以 **with** 開始，引導一種情境或是表示一種原因，造成後面的主要語意

**With the rising of living costs, it seems wiser to spend less.**

(由於/隨著物價上漲...。表示一種狀況)

和...一起，跟著

**With old friend and former foes we will work closely to reduce the nuclear threat.** foe:敵人、對手

## 25-4 | Capacitors in Parallel and in Series

When there is a combination of capacitors in a circuit, we can sometimes replace that combination with an **equivalent capacitor**—that is, a single capacitor that has the same capacitance as the actual combination of capacitors. With such a replacement, we can simplify the circuit, affording easier solutions for unknown quantities of the circuit. Here we discuss two basic combinations of capacitors that allow such a replacement.

### Energy Density

Using Eq. 25-22, we obtain  $u = \frac{U}{Ad} = \frac{CV^2}{2Ad}$ .

With Eq. 25-9 ( $C = \epsilon_0 A/d$ ), this result becomes  $u = \frac{1}{2} \epsilon_0 \left(\frac{V}{d}\right)^2$ .

## 5. (Phrase), S + V :

一句話也可以「片語」開頭，這也是常見句型的一種。

**In this book, you can **assume** all batteries are ideal.**

By combining Eq. 25-1 ( $q = CV$ ) and Eq. 27-33, we **find** that the potential difference  $V_C(t)$  across the capacitor during the charging process is

$$V_C = \frac{q}{C} = \mathcal{E}(1 - e^{-t/RC}) \quad (\text{charging a capacitor}). \quad (27-35)$$

By controlling the magnitudes and directions of the fields, Thomson could thus **control** where the spot of light appeared on the screen.

To be continued.